

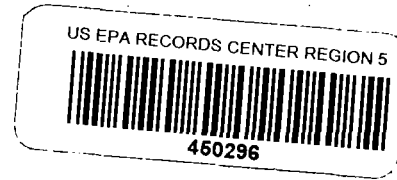
I 1  
11/29/82

DATE: November 29, 1982

TO: Land Division File

FROM: Gerald E. Steele, DLPC/FOS-Central Region *gso*

SUBJECT: LPC #18302013 - Vermilion County - Danville/Danville Plating



Clean-up operations at the closed Danville Plating facility began on November 29, 1982. This author was present as State on-scene coordinator. Petrochem Services of Lemont, Illinois, was the contractor hired by U.S.E.P.A. Mr. Bill Simes, Federal on-scene coordinator, filled me in on the activities since November 19, 1982, dealing with this site. District #118 had decided it was not their responsibility to clean up the site, and could not or would not fund the removal. Mr. Vanetta had volunteered to donate \$1,000 to the project. No State funds were available. Final approval to expend Federal dollars for the project was sought and received on November 24, 1982. Mr. Bill Simes and a member of the Technical Assistance Team (TAT) returned to the site that weekend. This was to collect samples from each container and conduct a final survey prior to clean-up. Discovery of a broken flowing waterline indicated that the water had not been turned off as previously reported. Several puddles were observed at various parts of the building. Hydrogen cyanide gas was detected above these puddles using Drager tubes. A site sketch was prepared. Petrochem Services also sent a sampling team to the facility. Results from their tests were expected the afternoon of November 29, 1982.

The initial plan was to solidify the wastes and place them in reconditioned drums. A pneumatic pump was to transfer the liquid wastes from the vats into a cement mixer. Portland cement and vermiculite were blended in until the proper consistency was obtained. The solidified waste was then transferred to the drums. Originally, the cement mixer was to be on the ground, and the solid shoveled in. To increase efficiency of the operation, the mixer was elevated and a chute was fabricated from a sheet of plywood and linked to the mixer.

Dye tests had been done and the determination was made that all drains were connected to the sanitary sewer. This common line was found and sealed by a plug.

The initial plan was to decontaminate the vats and other materials by pressure washing on-site. The building interior was to also be washed down using a chlorine solution. The main problem was containment of the wash-water. Another concern was

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containment of wastes should a spill occur. A system was devised, in which an empty metal vat was placed into the hole below the plugged sewer. The hose from a vacuum truck was then placed into the vat, and the plug removed. Constant vacuum was maintained at the hose. All wash-water flowed naturally to the existing drains. Similarly, any spilled wastes would travel naturally to the drains. The liquid was immediately collected into the truck, because of the maintained vacuum in the hose. This would also provide a safer containment vessel for spilled material.

Mr. Gary Kirk, a former employee and current neighbor to the facility, identified some of the solutions, as well as those vats which might contain cyanide. He also stated that a local business, Neumiester Plating of Tilton, might be interested in some of the solutions and vats. Mr. Simes was to contact Mr. Neumiester after receiving the lab results. This was done to insure that the materials were what they were thought to be, so as not to create a future disposal problem.

The lab results were phoned in during the noon hour. A summary of these results as received is attached. Due to listing in RCRA and 700 Series State Regulations, the wastes were determined to be hazardous. The solution and sludges were listed under Hazardous Wastes from Non-Specific Sources with ID numbers of F007, F008, and F009. Many of the wastes also failed the criteria for hazardous wastes (toxicity, reactivity, and corrosivity). Composite samples from all acids and all bases also failed the criteria. Floor sweepings and wood which was in contact with the floor, were to be treated as hazardous wastes. It was felt that the wood on the elevated walkway was not contaminated to the extent to make it hazardous, but was sufficiently contaminated to be classified as a special waste. The solidified waste was to be disposed of at a secure landfill in Ohio operated by CECOS. The estimated cost for solidification and disposal was just over six dollars (\$6) per gallon. Hauling was an additional expense. The option of treating some of the waste was suggested. Chem-Clear of Chicago was contacted by Petrochem. Chem-Clear stated they would not be able to handle the reactive solutions, but might be able to handle the acids. The limiting factors would be hexavalent chrome content, and nitric acid. If they could treat the material, an estimated cost would be under \$.25 per gallon. Additional tests were to be performed by Petrochem's lab to verify treatment suitability. Mr. Bill Simes determined that,

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should treatment be a viable alternative, the solutions would not be taken to Mr. Neumiester. Mr. Simes spoke to Mr. Vanetta's new attorney, Mr. Larry Lessen, and the sale of vats and solutions was discussed.

Homes directly north and east of the facility were evacuated for approximately two hours during the initial solidification process. This was done as a precaution because there could have been a toxic reaction when the cyanide bearing solutions were solidified. With the exception of one gentleman who arrived during the evacuation period, the residents were very cooperative. This author monitored HCN gas levels at the site boundary downwind (a southwest wind was present) from the solidification process. No HCN was detected. Petrochem technicians could solidify a barrel of waste in approximately ten (10) minutes. By the end of the day, all liquids in the west room had been solidified. The drum of zinc cyanide had been overpacked and surrounded with vermiculite. A member of the Danville Auxillary Police arrived at the site to provide overnight security.

Problems which hindered the operation included:

- a. The rental air compressor would not start. A replacement was delivered to the site by the rental company.
- b. The electrical lines going to the building were still energized, instead of being disconnected as initially reported. The power company came out and cut the wires. They also removed the meter and the wire between the pad and the building.
- c. The workman who was mixing the waste/concrete/vermiculite had a severe fogging problem with his respirator. This caused a consistency problem as well as a safety hazard. A TAT member loaned him a noseclip attachment for the respirator, which considerably lessened the problem.

Communication at the site was provided by Vermilion County ESDA. A vehicle was kept at the site at all times while work was in progress. The operator had direct radio contact with the fire and police departments, as well as the ESDA Emergency Operations Center.

GES/cp

Attachment

cc: ✓ DLPC/FOS, Central Region  
Emergency Response Unit  
B. Simes/USEPA-Region V

STATE OF ILLINOIS  
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357  
ADM 39

Subject 18302013 Lpc # Vermilion Co.

Data Danville / Danville Mining Petrochem Sample Analysis

Reviewed by G.E. Slack

Date 11-30-82

| Acid Vat # | pH   |
|------------|------|
| 3          | Ø    |
| 14         | 2.56 |
| 15         | .3   |
| 21         | 4.96 |
| 26         | 1.78 |
| 29         | .3   |
| 31         | 3.5  |
|            | 2.6  |
| 33         | Ø    |

Composite sample  
pH 4.43

Arsenic = .85 ppm  
Barium = 7.43 ppm  
Cadmium = 264.67 ppm \*  
Chromium = 18,390 ppm \*  
Copper = 685 ppm  
Nickel = 40,593 ppm  
Mercury = .067 ppm  
Lead = 142.95 ppm \*  
Zinc = 664 ppm  
Selenium = .046 ppm  
Silver = 2.69

| Base vat # | pH    |
|------------|-------|
| 4          | 11.18 |
| 5          | 12.69 |
| 12         | 10.58 |
| 16         | 12.38 |
| 17         | 11.62 |
| 18         | 11.85 |
| 22         | 13.11 |
| 23         | 9.96  |
| 24         | 9.86  |
| 25         | 9.55  |
| 27         | 9.86  |
| 7          | 10.06 |
| 19         | 8.45  |
| 13         | 7.37  |
| 20         | 7.45  |

Composite sample

pH 12.57

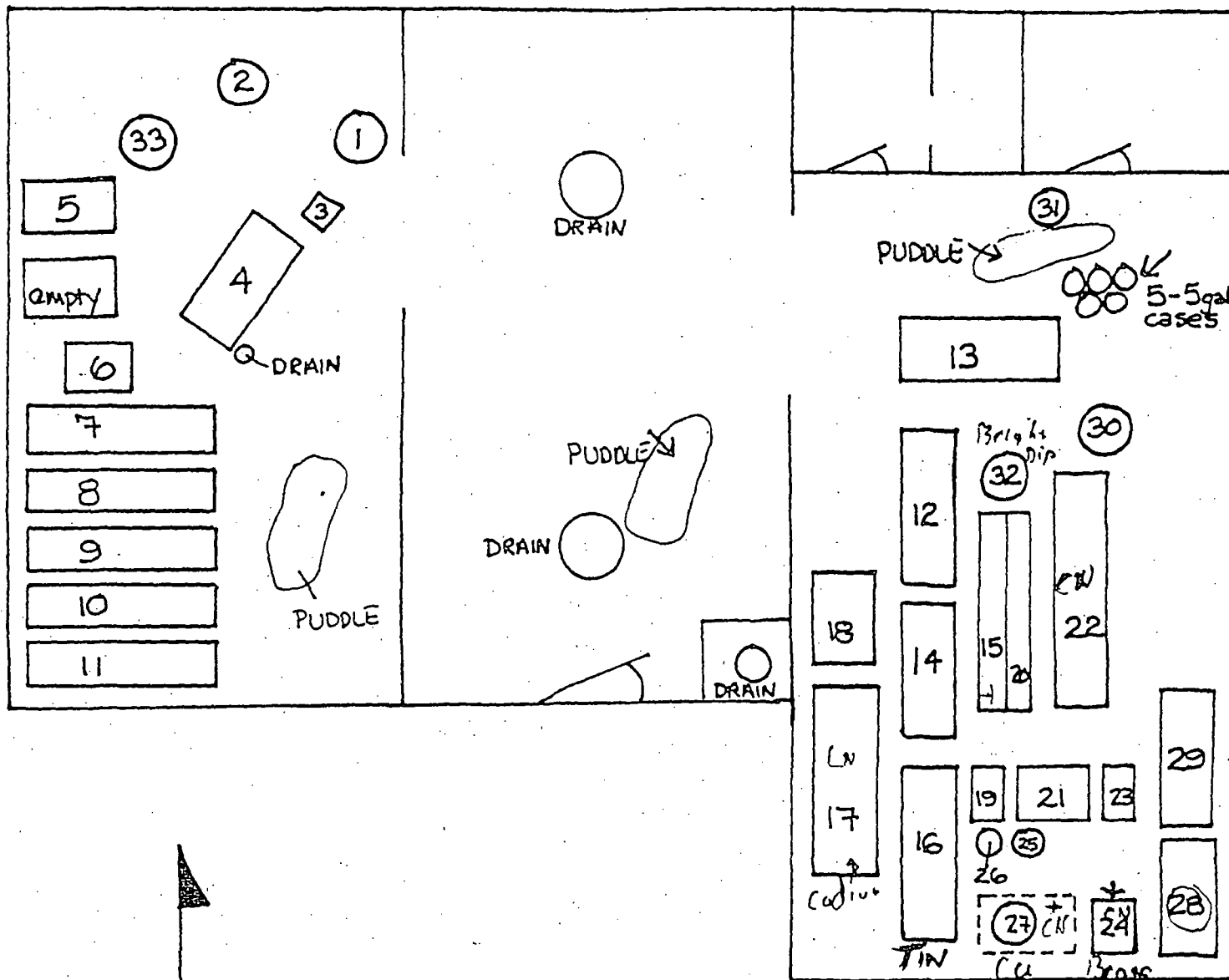
CN = 3.35%  
Arsenic = .029 ppm  
Barium = 510 ppm  
Cadmium = 2220 ppm \*  
Chromium = 90.45 ppm \*  
Copper = 6658 ppm  
Nickel = 283.7 ppm  
Mercury = <.01 ppm  
Lead = 11.1 ppm \*  
Zinc = 12,360 ppm  
Selenium = .026 ppm  
Silver = 1.65 ppm

| Drum # | pH (lab) |
|--------|----------|
| 1      | 9.6      |
| 2      | 11.05    |
| 3      | 9.31     |
| 4      | 9.28     |
| 5      | 11.15    |
| 6      | 12.18    |
| 7      | 13.24    |
| 8      | 12.45    |
| 9      | 13.32    |
| 10     | 13.17    |
| 11     | 13.25    |
| 12     | 13.23    |
| 13     | 13.02    |
| 14     | 12.7     |
| 15     | 11.0     |
| 16     | 12.44    |
| 17     | 11.04    |
| 18     | 13.23    |
| 19     | 12.19    |
| 20     | 10.39    |
| 21     | 8.55     |

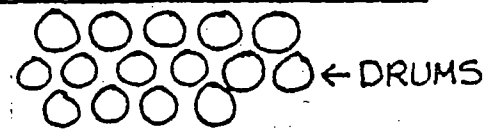
Samples

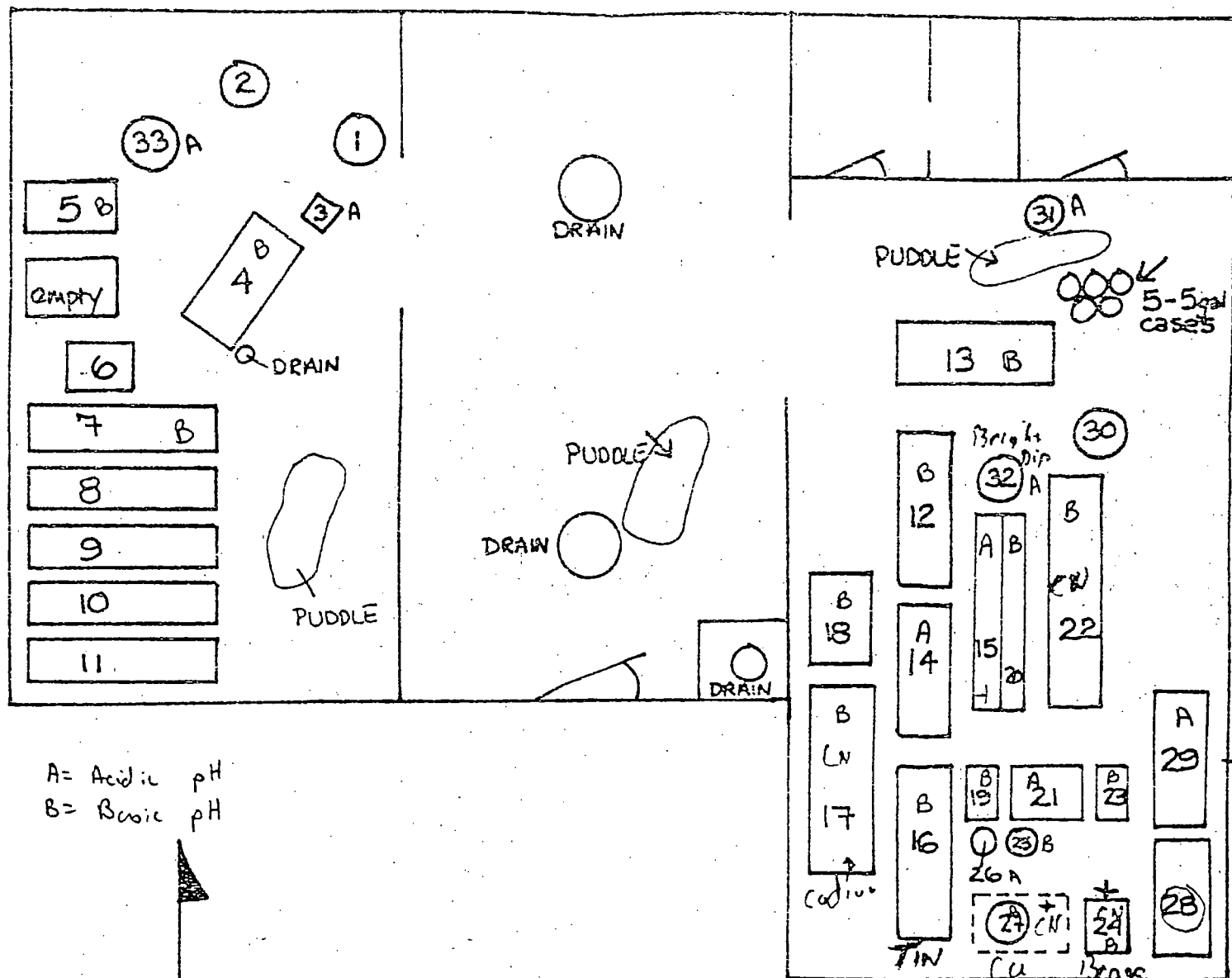
|    |          |
|----|----------|
| 8  | } Solids |
| 9  |          |
| 10 |          |
| 11 |          |

\* = Exceeds E.P. Toxicity Stds.



Danville Plating Company  
 307 E. Fairchild  
 11-23-82  
 S. Amendt





Danville Plating Company  
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 11-23-82  
 S. Amendt

DANVILLE PLATING COMPANY

DANVILLE, ILLINOIS

| <u>Tank<br/>Number</u> | <u>Description</u>              | <u>pH<br/>(pH Meter)</u>  | <u>Cyanide<br/>(hydrocyanic acid<br/>draeger tubes)</u> |
|------------------------|---------------------------------|---------------------------|---|
| 1                      | Barrel labelled<br>zinc cyanide |                           |   |
| 2                      | Closed can                      |                           |   |
| 3                      | Open plastic jug                | 0                         |   |
| 4                      | Open vat                        | 9                         |   |
| 5                      | Open vat                        | 5                         |   |
| 6                      | Open vat                        | 4                         |   |
| 7                      | Open vat                        | 7.5                       |   |
| 8                      | Open vat (no liquid)            | -                         |   |
| 9                      | Open vat (no liquid)            | -                         |   |
| 10                     | Open vat (no liquid)            | -                         |   |
| 11                     | Open vat (no liquid)            | -                         |   |
| 12                     | Open vat (full)                 | 7, 10 after<br>stirring   |   |
| 13                     | Open vat                        | 0                         |   |
| 14                     | Open vat (full)                 | 7                         |   |
| 15                     | Open vat                        | 1                         |   |
| 16                     | Open vat (full)                 | 7.5, 11<br>after stirring | <i>7m solution</i>                                      |
| 17                     | Open vat                        | 8                         |   |
| 18                     | Open vat                        | 6.5                       |   |
| 19                     | Open vat                        | 2.5                       |   |
| 20                     | Open vat                        | 0                         |   |
| 21                     | Open vat                        | 0                         |   |

DANVILLE PLATING COMPANY

DANVILLE, ILLINOIS

(CONT.)

| <u>Tank<br/>Number</u> | <u>Description</u>                                    | <u>pH<br/>(pH Meter)</u> | <u>Cyanide<br/>(hydrocyanic acid<br/>draeger tubes)</u> |
|------------------------|---|--------------------------|---|
| 22                     | Open Vat  | 0                        |   |
| 23                     | Open vat  | 1                        |   |
| 24                     | Open vat  | 4                        |   |
| 25                     | Open bucket   | 3                        |   |
| 26                     | Open plastic pail<br>4" liquid                        | 0                        |   |
| 27                     | Open drum   | 4                        |   |
| 28                     | Open vat containing<br>grease                         | -                        |   |
| 29                     | Open vat  | 7                        |   |
| 30                     | Open drum   | 5.5                      |   |
| 31                     | Small open drum                                       | 3.5                      |   |
| 32                     | Open drum   | 0                        |   |
| 33                     | Open vat  | 0.5                      |   |
| 5-5 gallon<br>cases    | Marked nickel<br>brightener (6% by<br>weight dioxane) |                          |   |
| Drain near<br>#4       |   | -                        | 2 ppm   |
| Puddle near<br>#8      |   | 6.5                      | 5 ppm   |
| Puddle near<br>#31     |   | 9.5                      |   |
| Puddle near<br>door    |   | 7.5                      |   |
| Outdoor drum           |   | 1                        | ND  |